

Traffic Operations

## **APPROVED PRODUCTS LIST**

TRAFFIC SIGNALS AND HIGHWAY LIGHTING EQUIPMENT

### TRAFFIC SIGNALS AND HIGHWAY LIGHTING EQUIPMENT

#### I. GENERAL

This Approved Products List (APL) is based on equipment meeting department specifications and being tested for the specified test period with satisfactory performance. All models shall conform to the latest revision of the Missouri Standard Specifications for Highway Construction unless otherwise indicated. The models indicated on the list are approved, but are subject to final field inspection before acceptance.

The department frequently tests new products and equipment for traffic signals and highway lighting. These new products may be installed on a construction project, purchased on parts orders or with controller orders. Vendors may also submit items, at no cost to the department, for the test period. Only a limited number of units will be accepted for test statewide until an item is added to the Approved Products List. A vendor wishing to initiate a test on a new product shall submit a Product Evaluation Request Form - Signal and Lighting Equipment. Copies of this form can be obtained from our website at <a href="https://www.modot.state.mo.us">www.modot.state.mo.us</a> or contact MoDOT Traffic Operations. Minor model changes do not require an evaluation period, although the vendor shall submit specification sheets and a sample of the product for the Department to inspect.

All equipment evaluations are coordinated through MoDOT Traffic Operations. The vendor supplying the equipment shall provide equipment specifications and a certification that the equipment meets department specifications before the test is performed. The equipment is tested for the period specified on the APL. Products that are not performing satisfactorily will be replaced with an approved product if the vendor cannot provide timely correction of the problem or if unsatisfactory operation of the intersection results.

If a vendor is proposing a product that does not meet department specifications, an explanation of why the product meets or exceeds the current specifications must be provided by the vendor in writing to Traffic Operations. If approved, the product may be tested for the specified period as described above. If the product is satisfactory, the Department will consider a revision to the applicable specifications. Products will not be added to the Approved Products List that do not meet department specifications.

Products on the APL shall continue to perform satisfactorily. In addition, the vendors shall support the products. Products not performing as required or not supported are subject to removal from the APL.

Grounds for removal of products include but are not limited to:

Significant change in product specifications or design without notification to the department.

Failure to correct or replace products that are defective in manufacturing or workmanship.

Repeated patterns of malfunctions of a product not adequately corrected by the vendor.

Unreasonable pricing of repair parts or repair work. Repair work not completed in a reasonable time frame.

Excessive delivery times for new purchases or replacement parts.

Changes in standard specifications may also necessitate removal of specific products from the APL. If this occurs, there will be a grace period where the product will be retained on the list after the specifications are changed. However the product will be removed from the list if it is not revised to meet specifications.

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#### II. TRAFFIC SIGNAL EQUIPMENT

All traffic signal equipment requires a one-year evaluation period.

### **CONTROLLERS**

| NEMA CONTROLLERS  | MODEL                 |
|---|-----------------------|
| Eagle Econolite Peek Traffic Control Technologies (TCT) | ASC/2-2100<br>3000    |
| NEMA ON-STREET MASTER CONTROLLER                        | MODEL                 |
| Eagle Econolite Econolite                               | KMC-10,000            |
| SOLID STATE PRETIMED CONTROLLERS (ALL TYPES)            | MODEL                 |
| Eagle   | EPIC Series           |
| Traffic Control Technologies (TCT)                      | LIVID 40 Series       |
| 170 CONTROLLERS   | MODEL                 |
|   | MODEL<br>170E<br>170E |

### CABINETS AND BACK PANELS (NEMA & S.S. PRETIMED)

NOTE: Cabinets and Back panels that meet MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide a model that meets specifications and complete a satisfactory one-year evaluation as described above to be added to the list.

### **NEMA CABINET AND BACK PANEL ASSEMBLIES**

Control Technology Eagle Econolite Henke/Bison IDC/Gibbons

### SOLID STATE PRETIMED CABINET AND BACK PANEL ASSEMBLIES

Eagle

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### **CABINETS AND RACKS (TYPE 170 CONTROLLERS)**

NOTE: Cabinets and Racks that meet MoDOT specifications from the following manufacturers will be accepted. ALL other manufacturers must provide a model that meets specifications and complete a satisfactory one-year evaluation as described above to be added to the list.

**MODEL** 

### 332 AND 336S CABINET AND RACK ASSEMBLIES

McCain Safetran Signal Control

### **CONFLICT MONITORS**

**NEMA CONFLICT MONITORS** 

|    | Eberle Design Incorporated (EDI)   | .NSM-12<br>.SSM-12LE<br>.NM512 |
|----|------------------------------------|--------------------------------|
|    | Peek/Transyt                       | .CM82-03                       |
|    | Power Distribution & Control (PDC) | .CM82-12                       |
|    | Solid State Devices                | .LCD-6P<br>.LCD-12P            |
|    | Traffic Control Technologies (TCT) | .LNM Series  MODEL             |
|    | Eberle Design Incorporated (EDI)   |                                |
| CA | BINET ACCESSORIES                  |                                |
|    | AUXILIARY TIME CLOCK               | MODEL                          |
|    | Eltec                              | .TC-14                         |
|    | EXTERNAL T.B.C. COORDINATORS       | MODEL                          |

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| FLASHERS<br>(170)  | MODEL                                |
|--|--------------------------------------|
| Solid State Devices  |                                      |
| FLASHERS<br>(NEMA)   | MODEL                                |
| Eberle Design Incorporated (EDI)   | .SSF-86                              |
| FLASH TRANSFER RELAYS  | MODEL                                |
| AMECO  | .W21ACPXD-5<br>.136-62T-3A1          |
| LOAD SWITCHES (170)  | MODEL                                |
| Power Distribution & Control (PDC)   | .200<br>200D<br>200 CUBE             |
| LOAD SWITCHES (NEMA)   | MODEL                                |
| Eberle Design Incorporated (EDI)  Power Distribution & Control (PDC)  Power Distribution & Control (PDC)  Traffic Control Technologies (TCT) | .SSS-86<br>.SSS-88                   |
| ISOLATORS (170 only)<br>(242=DC, 252=AC)   | MODEL                                |
| Detector Systems Detector Systems GDI GDI Power Distribution & Control (PDC). Power Distribution & Control (PDC). Safetran Safetran          | .242<br>.252<br>.242<br>.252<br>.242 |
| SURGE PROTECTORS   | MODEL                                |
| Edco   | .SHA 1210                            |

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|    | TONE RECEIVERS   | MODEL                   |
|----|--|-------------------------|
|    | Iniven   | IR30M-05-30             |
|    | TONE TRANSMITTERS                                      | MODEL                   |
|    | Iniven   | IT30                    |
| DE | TECTORS  |                         |
|    | MICROWAVE DETECTORS                                    | MODEL                   |
|    | Microwave Sensors                                      |                         |
|    | Electronic Integrated Systems, Inc. (EIS)              | RIMS X-2                |
|    | MICROLOOP, PROBE                                       | MODEL                   |
|    | 3M   | Canoga 701              |
|    | PEDESTRIAN PUSH BUTTONS                                | MODEL                   |
|    | Pelco  |                         |
|    | Feico  | SE-2001-00 (Flat Mount) |
|    | POWER SUPPLY FOR CARD RACK DETECTORS - NEMA            | MODEL                   |
|    | Detector Systems                                       | 205                     |
|    | ICC  |                         |
|    | PGK  | PS-1.2                  |
|    | SINGLE CHANNEL SHELF MOUNT DETECTORS, STANDARD         | MODEL                   |
|    | Detector Systems                                       | 910                     |
|    | Eberle Design Incorporated (EDI)                       |                         |
|    | Sarasota   | 535B/MS                 |
|    | SINGLE CHANNEL SHELF MOUNT DETECTORS, TIME DELAY       | MODEL                   |
|    | Detector Systems                                       | 913                     |
|    | Eberle Design Incorporated (EDI)                       | LM301T                  |
|    | Sarasota   |                         |
|    | ULTRASONIC DETECTORS                                   | MODEL                   |
|    | Microwave Sensors                                      | TC-30                   |
|    | 2-CHANNEL CARD RACK COUNTING<br>DETECTORS, DUAL OUTPUT |                         |
|    | Eberle Design Incorporated (EDI)                       | LM632                   |

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| 2-CHANNEL CARD RACK COUNTING<br>DETECTORS, SINGLE OUTPUT PULSE MODE<br>(170)  | MODEL       |
|---|-------------|
| Detector Systems  | 222-GP5     |
| 2-CHANNEL CARD RACK COUNTING<br>DETECTORS, SINGLE OUTPUT PULSE MODE<br>(NEMA) | MODEL       |
| Eberle Design Incorporated (EDI)  | .S27B<br>.C |
| 2-CHANNEL CARD RACK DETECTORS, STANDARD (170)                                 | MODEL       |
| Detector Systems  | 222-GP5     |
| 2-CHANNEL CARD RACK DETECTORS, STANDARD (NEMA)                                | MODEL       |
| Eberle Design Incorporated (EDI)  | .S27B<br>.C |
| 2-CHANNEL CARD RACK DETECTORS, TIME DELAY (170)                               | MODEL       |
| SarasotaSarasota  |             |
| 2-CHANNEL CARD RACK DETECTORS, TIME DELAY (NEMA)                              | MODEL       |
| 3M  Detector Systems  Eberle Design Incorporated (EDI)                        | .262CR      |

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**MODEL** 

### **SIGNAL HEADS**

**BACKPLATES** 

| DAOM LATEO   | MODEL  |
|--|--|
| Neodesia Plastics  | RP Sarias  |
| Pelco  |  |
| Traffic Parts  |  |
| Traille Faits  | 44XX Series  |
| HARDWARE   |  |
| NOTE: Hardware that meets MoDOT specifications from accepted. ALL other manufacturers must provide equipmen a satisfactory six-month evaluation as described above to be | t that meets specifications and complete   |
| Pelco  |  |
| Reliable 3/8" Strandvise   | 5202   |
| Reliable 1/4" Strandvise   | 5200   |
|  |  |
| LOUVERS  | MODEL  |
|  |  |
| Pelco  | GPL  |
| POLYCARBONATE SIDE-MOUNT BRACKETS WITH RELATED HARDWARE  | MODEL  |
| Component Products   | Any  |
| SIGNAL HEADS - ALUMINUM CONVENTIONAL   | MODEL  |
| Automatic/Eagle  | SIG Series   |
| McCain   |  |
| Safetrans/IDC  |  |
| Traffic Control Technologies (TCT)   |  |
|  |  |
| SIGNAL HEADS - ALUMINUM PEDESTRIAN   | MODEL  |
| Automatic/Eagle  | SIG Series   |
|  |  |
| SIGNAL HEADS - OPTICALLY LIMITED   | MODEL  |
|  |  |
| SIGNAL HEADS - OPTICALLY LIMITED  3M   | HVS 131 Series   |
| 3M   | HVS 131 Series   |
| 3M McCain  SIGNAL HEADS - POLY CONVENTIONAL  Chapel Hill   | HVS 131 SeriesHPTS Series  MODELSIG-TPB-305-CTP-EVN-0  |
| 3M McCain  SIGNAL HEADS - POLY CONVENTIONAL  | HVS 131 SeriesHPTS Series  MODELSIG-TPB-305-CTP-EVN-0  |
| 3M McCain  SIGNAL HEADS - POLY CONVENTIONAL  Chapel Hill   | HVS 131 SeriesHPTS Series  MODELSIG-TPB-305-CTP-EVN-0SA Series                               |
| 3M   | HVS 131 SeriesHPTS Series  MODELSIG-TPB-305-CTP-EVN-0SA SeriesLT SeriesLT SeriesMTSTP Series |
| 3M   | HVS 131 SeriesHPTS Series  MODELSIG-TPB-305-CTP-EVN-0SA SeriesLT SeriesLT SeriesMTSTP Series |

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| SIGNAL HEADS - POLY PEDESTRIAN                                 | MODEL                    |
|--|--------------------------|
| Chapel Hill  Eagle  McCain  Traffic Control Technologies (TCT) | SA Series<br>MTSP Series |
| SIGNAL LENSES-GLASS  | MODEL                    |
| Eagle  | Any                      |
| NICCall I  | vior series              |

### **POSTS AND MAST ARMS**

Note: Posts and Mast Arms do not require an evaluation period. Posts and Mast Arms shall be fabricated in accordance with MoDOT specifications and standards. Posts and Mast Arms shall be preapproved as required by the MoDOT standards and specifications to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Posts and Mast Arms are subject to field inspection before acceptance.

| STEEL POSTS AND MAST ARMS | DRAWING NUMBER |
|---------------------------|----------------|
| STELL FUSTS AND MAST ANMS |                |

| Ameron International | MO9811 - Rev. 9 (Type C)                   |
|----------------------|--|
| Ameron International | MO9812 - Rev. 10 (Type CL)                 |
| Union Metals         | 30443-B202 - Rev. 12 (Types C, CL, B & BL) |
| Valmont              | , , ,                                      |

### **MISCELLANEOUS**

| LOOP SEALANTS (Loop sealants do not require material certification) | MODEL                      |
|---|----------------------------|
| 3M  | 560<br>575<br>P606<br>290S |
| Chemque  Durant Paints  Pro-Seal                                    | Stat-A-Flex Polyseal       |

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| PEDESTAL BASES                        | MODEL           |
|---------------------------------------|-----------------|
| Component Products                    | CPI-BAS-1       |
| Pelco                                 |                 |
| Pelco                                 |                 |
| Pelco                                 | PB5340          |
| Pelco                                 |                 |
| Traffic Parts                         | TP 289 X        |
|                                       |                 |
| SPLICE KITS (DETECTOR LEAD-IN)        | MODEL           |
| 3M                                    | DBY Series      |
| HOMAC HMC Industries                  | RAB 1/0 Series  |
|                                       |                 |
| PAD MOUNTED SIGNAL CONTROL STATION    | MODEL           |
| Milbank Signal Service Only           | CP3B51C1PAAOMO1 |
| Milbank Signal with 120 Volt Lighting |                 |
| Milbank Signal with 240 Volt Lighting | CP3B62C2NBAOMO1 |
|                                       |                 |

### **SIGNAL BULBS**

| LIGHT EMITTING DIODES (LED)  | MODEL                               |
|------------------------------|-------------------------------------|
| Act One Communications, Inc. | T1-12G-001 (Green Ball)             |
| Act One Communications, Inc  |                                     |
| Dialight                     |                                     |
|                              | View or Mast Arm)                   |
| Dialight                     | 433-2270-001 (Green Ball Extended   |
|                              | View or Mast Arm)                   |
| Dialight                     | 433-3230-001 (Yellow Ball)          |
| GELcore                      |                                     |
| GELcore                      | DR6-RTFB-20A-40 (Red Extended View) |
| GELcore                      | DR6-GCFB-20A (Green Ball)           |
| GELcore                      | DR6-GCFB-20A-40 (Green Extended     |
|                              | View)                               |
| GELcore                      | DR6-YTFB-20A (Yellow Ball)          |
| GELcore                      | DR6-YTFB-20A-40 (Yellow Extended    |
|                              | View)                               |
| GELcore                      | DR6-YTAAN-21A (Yellow Arrow)        |
| GELcore                      | DR6-GCAAN-21A (Green Arrow)         |
| Ledtronics                   | TRF-112-OBG-120A (Green Ball)       |
| Ledtronics                   | TRF-112-OPY-120A (Yellow Ball)      |
| Ledtronics                   | TRF-108-OPY-120A (8" Yellow Ball)   |
| Leotek                       | TSL-12G-MH-A1 (Green Ball)          |

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| Leotek Precision Solar Controls Precision Solar Controls Precision Solar Controls Precision Solar Controls | .2015 (Yellow Ball)<br>.2035 (Green Ball)<br>.2942 (Red Ball) |
|--|---|
| OPTICALLY LIMITED  | MODEL   |
| 3MGeneral Electric (GE) Philips  | .150PAR46/TS  |
| STANDARD - 1260 LUMEN (8 inch indications)   | MODEL   |
| Sylvania   | .116A21TS8M   |
| STANDARD - 1750 LUMEN (12 inch indications)  |   |
| OTTAIN THOO ESIMEN (12 mon maloadono)  | MODEL   |

### **VIDEO DETECTION SYSTEMS**

**VIDEO DETECTOR** 

| Econolite | Autoscope 2004 |
|-----------|----------------|
| Econolite |                |
| Traficon  |                |

MODEL

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#### III. HIGHWAY LIGHTING

All highway lighting equipment require a one-year evaluation period except for items noted requiring a six-month evaluation.

### **LIGHTING POLES**

STEEL POLES

Note: Poles do not require an evaluation period. Poles shall be fabricated in accordance with MoDOT specifications and standards. They shall be pre-approved as required by the MoDOT standards and specifications in order to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Lighting poles are subject to field inspection before acceptance.

**DRAWING NUMBER** 

| Ameron International | MO98AT2 - Rev. 4 (Type AT45)         |
|----------------------|--------------------------------------|
| Ameron International | MO98AT3 – Rev. 4 (Type AT45)         |
| Ameron International | MO98AT4 – Rev. 3 (Type AT30)         |
| Ameron International | MO98B2 - Rev. 3 (Type B45 & MB45)    |
| Ameron International | MO98B4 – Rev. 2 (Type B30)           |
| Union Metals         |                                      |
| Union Metals         | 71019-B7 - Rev .4 (Types B45 & MB45) |
| Union Metals         | 71020-B2 - Rev. 5 (Type AT30)        |

### 

### **FOUNDATIONS**

Note: Screw anchor foundations do not require an evaluation period. Screw anchor foundations shall be fabricated in accordance with MoDOT specifications and standards. They shall be pre-approved as required by the MoDOT standards and specifications in order to be added to the list. The following manufacturers have pre-approved fabrication details and documentation on file with the department. Screw anchor foundations are subject to field inspection before acceptance.

## SCREW ANCHOR FOUNDATIONS DRAWING NUMBER

| J. H. Botts | JHB MOH 30 – Rev. A (Type AT30)   |
|-------------|-----------------------------------|
|             | JHB MOH 45-1 - Rev. À (Type AT45) |
|             | SA112-0695 – Rev. A (Type AT45)   |
|             | SA112-0696 – Rev. A (Type AT30)   |

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### **LUMINAIRES**

NOTE: Luminaires will not be furnished with photoelectric cells. Receptacles will have a shorting plug in place of cell. Multi-tap ballast for 120 Volt and 240 Volt fixtures is permissible.

| BRACKET ARM MOUNT - 150 WATT  | MODEL   |
|---|---|
| American Electric Lighting American Electric Lighting Crouse-Hinds/Cooper Crouse-Hinds/Cooper General Electric (GE) Holophane | Durastar 2000, Series 30<br>OVZ Series<br>OVX Series<br>M2RR Series |
| BRACKET ARM MOUNT - 250 WATT  | MODEL   |
| American Electric Lighting American Electric Lighting Crouse-Hinds/Cooper Crouse-Hinds/Cooper General Electric (GE) Holophane | Durastar 2000, Series 30<br>OVZ Series<br>OVX Series<br>MSRL Series |
| BRACKET ARM MOUNT - 400 WATT  | MODEL   |
| American Electric Lighting American Electric Lighting Crouse-Hinds/Cooper General Electric (GE) Holophane                     | Durastar 2000, Series 30<br>OVX Series<br>MSRL Series               |
| HIGH MAST LIGHTING  | MODEL   |
| NOTE: High mast lighting is custom designed for the local manufacturer's series are considered pre-approved.                  | cation. Fixtures from the following                                 |
| Cooper General Electric (GE) Holophane  | HMA Series  |
| POLE TOP MOUNTING   | MODEL   |
| American Electric Lighting Holophane Holophane  | HL2A Series   |
| SIGN LIGHTING - 250 WATT  | MODEL   |
| General Electric (GE)   | B17632 Series<br>PANL Series  |

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| SIGN LIGHTING - 400 WATT  | MODEL  |
|---|--|
| HolophaneHolophane  |  |
| UNDERPASS (WALLPACKS)   | MODEL  |
| American Electric Lighting Cooper General Electric (GE) Holophane Holophane Hubbell | WPK Series<br>WAL Series<br>MDWP Series<br>WL2K Series |

### **CONTROL EQUIPMENT**

| CONTACTORS-ELECTROMECHANICAL        | MODEL                 |
|-------------------------------------|-----------------------|
| Square D Westinghouse/Cutler-Hammer | Type S<br>A202 Series |
|                                     |                       |
| CONTACTORS-MERCURY                  | MODEL                 |

#### **CONTROL CABINETS**

NOTE: Cabinets that meet MoDOT specifications from the following manufacturers will be accepted. All other manufacturers must provide a model that meets specifications and complete a satisfactory six-month evaluation as described above to be added to the list.

Cleveland Switchboard Coxline Hoffman Shallbetter Inland Technologies

| LIGHTNING ARRESTER                                     | MODEL    |
|--|----------|
| Delta General Electric Tranquell                       |          |
| MOUNTING SOCKET FOR PHOTOELECTRIC CONTROL              | MODEL    |
| NOTE: Mounting sockets require a six-month evaluation. |          |
| American Electric Lighting                             | PBC      |
| Fischer-Pierce   | S476-71  |
| General Electric (GE)                                  | MB-PECTI |

| PAD MOUNTED LIGHTING CONTROL STATION                  | MODEL                          |
|---|--------------------------------|
| Milbank 240 Volt                                      | CP3B51C1PDAOMO3                |
| Milbank 480 Volt                                      |                                |
| Myers   |                                |
| Pacific Utility Products                              |                                |
| Tesco   |                                |
| Tesco   |                                |
|   |                                |
| PHOTOELECTRIC CONTROL                                 | MODEL                          |
| Area Lighting Research                                |                                |
| American Electric Lighting                            | 8060-4F                        |
| Dark To Light   | D120-1.0-ST                    |
| Fischer-Pierce  | 7700 Series                    |
| General Electric (GE)                                 |                                |
| General Electric (GE)                                 |                                |
| General Electric (GE)                                 |                                |
| ITT   |                                |
| Precision   |                                |
| TYPE A CIRCUIT BREAKERS                               | MODEL                          |
|   |                                |
| Square D  |                                |
| Westinghouse/Cutler-Hammer                            | EHD Series (1-Pole)            |
| Westinghouse/Cutler-Hammer                            | FDB Series (2-Pole)            |
| AVIATION LIGHTING                                     | MODEL                          |
| Hughey & Philips                                      | KG114                          |
| FUSED SLIP CONNECTORS                                 | MODEL                          |
| NOTE: Slip connectors require a six-month evaluation. |                                |
| •   |                                |
| Buss  | HEB-JWRYC                      |
| NAVIGATION LIGHTING                                   | MODEL                          |
| Tideland  | ML-140 with TF-3AC Lamp Change |
| Automatic Power, Inc                                  | FA-143                         |
| SPLICE KITS   | MODEL                          |
| 3M  | 82A1 (Sinale)                  |
| 3M  |                                |
| 3M  |                                |
|   |                                |
| 3M  |                                |
| HOMAC HMC Industries                                  |                                |

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### IV. POWER SUPPLY EQUIPMENT AND PULL BOXES

All items require a six-month evaluation period.

| MAIN SERVICE DISCONNECT ENCLOSURE WITH SAFETY SWITCH (NEMA 4) | MODEL                       |
|---|-----------------------------|
| General Electric (GE)   | TE 100 CS                   |
| Square D  | FA-100-DS Series E2         |
| Westinghouse  | WFDN 100                    |
| PREFORMED PULL BOX-CLASS 1 Straight                           | MODEL                       |
| Armorcast Products Company                                    | A6001640TAPCX22 (Box & Lid) |
| Strongwell/Quazite  | PG1730B532 (Box)            |
|   | PG1730H511 (Lid)            |
|   | PG1730BA Series             |
| Synertech   | S1730B24AA (Box)            |
|   | S1730HBB0A (Lid)            |
| Flared  |                             |
| Armorcast Products Company                                    |                             |
| Associated Plastics/New Basis                                 |                             |
| Associated Plastics/New Basis                                 |                             |
| CDR   | ` ,                         |
| Pencell Plastics  | PEM-1830-PCX (Box & Lid)    |
|   |                             |
| PREFORMED PULL BOX-CLASS 2 Straight                           | MODEL                       |
| Armorcast Products Company                                    | A6001974TAPCX26 (Box & Lid) |
| Strongwell/Quazite  |                             |
|   | PG2436H508 (Lid)            |
|   | PG2436BA Series             |
| Synertech   | S2436B26AA (Box)            |
|   | S2436HCB0A (Lid)            |
| Flared  |                             |
| Armorcast Products Company                                    |                             |
| Associated Plastics/New Basis                                 | ,                           |
| Associated Plastics/New Basis                                 | ,                           |
| CDR   |                             |
| Pencell Plastics  | PEM-2436-30 (Box & Lid)     |

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| PREFORMED PULL BOX-CLASS 3 Straight     | MODEL                                 |
|---|---------------------------------------|
| Armorcast Products Company              | A6001430TAPX36 (Box & Lid)            |
| Strongwell/Quazite                      | · · · · · · · · · · · · · · · · · · · |
| - · · · · · · · · · · · · · · · · · · · | PG3048H517 (Lid)                      |
|   | PG3048BA Series                       |
| Synertech                               | S3048B36AA (Box)                      |
| •                                       | S3048HCB0A (Lid)                      |
| Flared                                  | ,                                     |
| Armorcast Products Company              | A6001550TAX36 (Box & Lid)             |
| Associated Plastics/New Basis           | FCA304836EE4749-61 (Box & Lid)        |
| CDR                                     | A12-3048 Series (Box & Lid)           |
| Pencell Plastics                        | PEM-3048-36-PCX-SPLIT (Box & Lid)     |
| PREFORMED PULL BOX-CLASS 5              | MODEL                                 |
| Flared                                  |                                       |
| Armorcast Products Company              | ,                                     |
| CDR                                     | SA12-3200-36 (Box & Lid)              |

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